

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A hydrogenation catalyst for hydrocarbon oil,  
produced by a method comprising:

impregnating a refractory ~~inorganic oxide~~ an alumina carrier with a solution  
comprising a salt of a titanium-peroxohydroxycarboxylic acid, then further  
~~containing a water-soluble metal compound of Group 4 of the Periodic Table so that it~~  
~~carries the metal compound, then further~~  
impregnating with an aqueous solution containing at least one metal compound of  
Group 6 and at least one metal compound of Groups 8 to 10 of the Periodic Table so that it  
carries the metal compounds, and thereafter  
calcining it at temperature not higher than 300°C.  
~~heating it at a temperature not higher than 300 °C;~~  
~~wherein said refractory inorganic oxide carrier is alumina.~~

Claims 2-3 (Canceled).

Claim 4 (Previously Presented): A hydrogenation catalyst for hydrocarbon oil,  
produced by a method comprising:

impregnating a refractory inorganic oxide carrier with an aqueous solution containing  
a salt of a titanium-peroxohydroxycarboxylic acid so that it carries the titanium compound,  
then further

impregnating with an aqueous solution containing at least one metal compound of  
Group 6 and at least one metal compound of Groups 8 to 10 of the Periodic Table so that it  
carries the metal compounds;

wherein the refractory inorganic oxide is alumina.

Claim 5 (Cancelled).

Claim 6 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 2, wherein the amount of titanium in terms of its oxide form falls between 1 and 15% by weight of the refractory inorganic oxide carrier.

Claim 7 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 1, wherein the metal of Group 6 of the Periodic Table is molybdenum and the metal of Groups 8 to 10 of the Periodic Table is nickel.

Claim 8 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 1, further carries a phosphorus compound along with the metal compound of Group 6 and the metal compound of Groups 8 to 10 of the Periodic Table.

Claims 9-34 (Cancelled).

Claim 35 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 3, wherein the amount of titanium in terms of its oxide form falls between 1 and 15 % by weight of the refractory inorganic oxide carrier.

Claim 36 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 4, wherein the amount of titanium in terms of its oxide form falls between 1 and 15 % by weight of the refractory inorganic oxide carrier.

Claim 37 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 4, wherein the metal of Group 6 of the Periodic Table is molybdenum and the metal of Groups 8 to 10 of the Periodic Table is nickel.

Claim 38 (Previously Presented): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 4, which carries a phosphorus compound along with the metal compound of Group 6 and the metal compound of Groups 8 to 10 of the Periodic Table.

Claims 39-59 (Canceled).

Claim 60 (New): A hydrogenation catalyst for hydrocarbon oil, produced by a method comprising:

impregnating a refractory alumina carrier with a solution comprising a salt of a titanium-peroxohydroxycarboxylic acid, then further

impregnating with an aqueous solution containing at least one metal compound of Group 6 and at least one metal compound of Groups 8 to 10 of the Periodic Table so that it carries the metal compounds, and thereafter

calcining it at a temperature not higher than 300 °C;

wherein the hydrogenation catalyst for hydrocarbon oil has a ratio,  $x = F_m/F$ , which is at least 0.5 in a graph indicating the data of linear analysis of the metal atom in one direction obtained through electron probe microanalysis of the cross section of the carrier, and showing the relationship between the length,  $t$ , of the cross section in the cross direction of the carrier ( $t$  indicates the distance from one surface of the carrier) and the X-ray intensity,  $I$ , in which  $F$  indicates the integral value of the X-ray intensity  $I(t)$  with  $t$  being the distance between one

surface of the carrier and the other surface thereof, and  $F_m$  indicates the integral value of the X-ray intensity  $I_m(t)$  on the line tangential to the X-ray intensity curve at the minimum and smallest point of the curve, with  $t$  being also the distance between one surface of the carrier and the other surface thereof.

Claim 61 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 60, wherein the amount of titanium in terms of its oxide form falls between 1 and 15% by weight of the refractory alumina carrier.

Claim 62 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 60, wherein the metal of Group 6 of the Periodic Table is molybdenum and the metal of Groups 8 to 10 of the Periodic Table is nickel.

Claim 63 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 60, further carries a phosphorus compound along with the metal compound of Group 6 and the metal compound of Groups 8 to 10 of the Periodic Table.

Claim 64 (New): A hydrogenation catalyst for hydrocarbon oil, produced by a method comprising:

impregnating a refractory alumina carrier with a solution comprising a salt of a titanium-peroxohydroxycarboxylic acid, then further

impregnating with an aqueous solution containing at least one metal compound of Group 6 and at least one metal compound of Groups 8 to 10 of the Periodic Table so that it carries the metal compounds, and thereafter

calcining it at temperature not higher than 300°C;

wherein the hydrogenation catalyst for hydrocarbon oil is substantially free of chloride.

Claim 65 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 64, wherein the amount of titanium in terms of its oxide form falls between 1 and 15% by weight of the refractory alumina carrier.

Claim 66 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 64, wherein the metal of Group 6 of the Periodic Table is molybdenum and the metal of Groups 8 to 10 of the Periodic Table is nickel.

Claim 67 (New): The hydrogenation catalyst for hydrocarbon oil as claimed in claim 64, further carries a phosphorus compound along with the metal compound of Group 6 and the metal compound of Groups 8 to 10 of the Periodic Table.

DISCUSSION OF AMENDMENT

Claims 1-4, 6-8, and 35-38 are pending.

Claim 1 is amended in order to improve readability and to include the limitations of Claims 2-3. Accordingly, Claims 2-3 are canceled without prejudice.

Claims 60-67 are added.

Claim 60 is like pending Claim 1 except that it includes a limitation presented in original Claim 24. Support for this limitation is found in the Specification in the text spanning pages 35-37.

Claim 64 is like pending Claim 1 except that it includes the limitation "wherein the hydrogenation catalyst for hydrocarbon oil is substantially free of chloride." It is noted that many of the Group 4 metal compounds disclosed on pages 26-27 are based on complexes of alkoxides or alkoxide-containing ligand. Impregnation of a carrier employing any one of these complexes will result in a catalyst that is substantially free of chloride. It is also noted that though  $\text{TiCl}_4$  is employed as a precursor compound for titanium-peroxocitrate **T1** (see page 48, three lines from the bottom of the page), the gel used to prepare **T1** was washed until the "chloride was removed from the gel" (see page 48, lines 10-11). Accordingly, it is believed that this limitation is adequately supported in the originally filed disclosure.

Claims 61-63 and 65-67 are based on original Claims 6-8.

No new matter is believed to be added upon entry of the amendment.

Upon entry of the amendment, Claims 1, 4, 6-8, 35-38, and 60-67 will be active.